

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU02/00114

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: C12P 7/62; C12N 9/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

SEE BELOW

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SEE BELOW

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

STN (WPIDS): esterase and pyrethroid

EMBL: SEQ ID No 1-3

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,Y	Insect Biochemistry and Molecular Biology 31, pp 715-725 (2001) Valles et al "Purification and characterization of trans-permethrin metabolizing microsomal esterases from workers of the eastern subterranean termite, <i>Reticulitermes flavipes</i> (Kollar)"	1-3 and 8-17
X,Y	Journal of Medical Entomology 37, pp 721-725 (2000) Picollo et al "Resistance of insecticide and effect of synergists on permethrin toxicity in <i>Pediculus capitis</i> (Anoplura: Pediculidae) from Buenos aires"	1-3 and 8-17
X	Journal of Medical Entomology 38, pp 623-628 (2001) Rodriguex et al "Detection of insecticide resistance in <i>Aedes aegypti</i> (Diptera: Culicidae) from Cuba and Venuzuela"	1-3 and 8-17

☒ Further documents are listed in the continuation of Box C ☐ See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

14 March 2002

Date of mailing of the international search report

- 3 APR 2002

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,Y	Journal of Medical Entomology 94, pp 706-713 (2001) Lee et al "Biochemical mechanisms of resistance in strains of <i>Oryzaephilus surinamensis</i> (Coleoptera silvanidae) resistant to malathion and chlorpyrifos-methyl"	1-3 and 8-17
X,Y	Insect Biochem Molec biol 27, pp 15-25 (1997) Newcomb et al " cDNA cloning, Baculovirus-expression and kinetic properties of the esterase, E3, involved in organophosphorus resistance in <i>Lucilia cuprina</i> "	1-20 and 31-33
X,Y	Proc Natl Acad Sci USA 94, pp 7464-7468 (1997) Newcomb et al "A single amino acid substitution converts a carboxylesterase to an organophosphorus hydrolase and confers insecticide resistance on a blowfly".	1-40
X,Y	J Mol Evol 51, pp 149-160 (2000) Robin et al "Reconstructing the diversification of α -esterases: comparing the gene clusters of <i>Drosophila buzzatii</i> and <i>D.melanogaster</i> ". Relevant to SEQ ID Nos 1 and 2	1-40
X,Y	Insect Molecular Biology 9, pp 647-653 (2000) Small et al "Molecular characterization of the amplified carboxylesterase gene associated with organophosphorus insecticide resistance in the brown planthopper, <i>Nilaparvata lugens</i> ". Relevant to SEQ ID no 3	1-40
X,Y	Biochem J 294, pp 569-574 (1993) Field et al "Cloning and analysis of the esterase genes conferring insecticide resistance in the peach-potato aphid, <i>Myzus persicae</i> (Sulzer). Relevant to SEQ ID no 1 and 2.	1-40